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EXAMINER
VU, TUAN A

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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

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Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/22/04*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☒ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date *1/22/04*.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to the application filed 1/22/2004

        Claims 1-14 have been submitted for examination.

Claim Objections

2.   Claims 8 and 12 are objected to because of the following informalities: the phrases

recited as '...comprising instructions of:' (line 4) should be adjusted because syntactically,

'instructions' are <u>for</u> performing some actions not 'of' performing some actions. Appropriate

correction is required.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new
> and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4.   Claims 1-7, 9, 11, 14 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

> The Federal Circuit has recently applied the practical application test in determining whether the claimed
> subject matter is statutory under 35 U.S.C. § 101. The practical application test requires that a " useful, concrete,
> and tangible result" be accomplished. An "abstract idea" when practically applied is eligible for a patent. As a
> consequence, an invention, which is eligible for patenting under 35 U.S.C. § 101, is in the "useful arts" when it is a
> machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The
> test for practical application is thus to determine whether the claimed invention produces a "useful, concrete and
> tangible result".

        Specifically, claim 1 recites an apparatus comprising a model acquisition means, a

selection means and deletion/generation means, all of which being disclosed in the Specifications

as software-implemented programs or engine (see Specifications, pg. 10-11; Figs. 2-3).

Although the Specifications mentions about computer storage medium to embody those

programs, the medium is not explicitly recited in along with the above apparatus. Software

functionality based on programs or instructions code without being supported by an explicit

recital of a hardware embodiment amounts to abstract idea, because one skill in the art would not

be able to construe that such functionality can be realized or carried out in the absence of such

hardware support (e.g. computer or machine readable medium) so that a result can be generated.

As a whole, the apparatus claim fails to convey that the Practical Application Test requirement is

fulfilled in terms of yielding a non-abstract, concrete and useful result. The claim is rejected for

leading to a non-statutory subject matter.

Claims 2-7 are rejected for failing to remedy to the lack of tangible hardware support of

the base claim.

Claim 9 recites an apparatus comprising the model acquisition means, a selection means

and deletion/generation means of claim 1; hence is rejected for the same reasons as set forth

above.

Claims 11 and 14 recite the same means as set forth in the rejection of claims 1, 9, i.e.

means being non-tangible software functionality without support of explicit hardware

embodiment; hence amount to a non-practical application, a non-realizable abstract idea; and are

also rejected for the same reasons as set forth above.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-5, 7-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Herbert

Hanselmann, 'Automotive Control: From Concept to Experiment to Product', IEEE

International Symposium on Computer-Aided Control System Design, Proceedings of September

1996; pp. 129-134(hereinafter Hanselmann).

       As per claim 1, Hanselmann discloses a code generation apparatus to generate a source

code using a given model, comprising:

       model acquisition means for acquiring the given model (e.g. Step 1, Step 2, pg. 129, R

col.; Fig. 4-5 – Note: model inherently reads on integrating therein of requirements such as

automotive/regulation-based parts names, variables, attributes, or parametric data) whose

specific part is specified by a part specifier (e.g. *Automotive control ... city-driving ... fuel*

efficiency... Regulations ... requirements ... Total Development Environment – L column, pg.

129; Step 6, pg. 129; Fig. 4-5 – Note: requirements gathering to set up initial model and create

Simulink blocks --with parameters -- therefrom reads on model specified by part specifier);

       selection information acquisition means for acquiring selection information capable of

indicating at least one of selection and deletion of the specific part (e.g. step 3-4; R col. pg. 129;

Fig. 2, pg. 130) using the part specifier (Note: Simulink drag-and-drop of simulator parameters

in conjunction with initial model specification reads on selection/deletion using part specifier) ;

and

       deletion and generation means for generating the source code from a certain model (e.g.

step 5, R col., pg. 129; Fig. 1, pg. 130; *step 2 and 3 may be repeated many times* – pg. 130,

bottom L col.; bottom L, pg. 132 to top pg. 132, R column – Note: improving via readjusting of

blocks in *Simulink* tool reads on reaching a more certain model than the initial or preliminary

· model – see step 6-8, pg. 129-130; backward arrows in Fig. 1) that is generated using the given

model acquired by the model acquisition means based on the selection information acquired (e.g.

Step 1, Step 2, pg. 129, R col.; Fig. 4-5) by the selection information acquisition means.

As per claim 2, Hanselmann discloses wherein the part specifier includes a part

specification block (e.g. Fig. 4-5 in light of step 1, step 2, step 4-6, pg. 129, L col.) which

encloses the specific part of the given model (e.g. *Toyota* – section 3, The **Virtual ECU**, pg. 131

– Note: Simulink-based to address verification of requirements of parameters for Toyota's ECU

reads on part including a given model), and wherein the selection information acquisition means

acquires the selection information indicating at least one of selection and deletion of the specific

part using the part specification block (e.g. step 5, R col., pg. 129; Fig. 1, pg. 130; *step 2 and 3*

may be repeated many times – pg. 130, bottom L col. – Note: improving via readjusting of

blocks in *Simulink* tool reads on selection/deletion to improve upon initial or preliminary model

– see step 6-8, pg. 129-130; backward arrows in Fig. 1).

. **As per claim 3**, Hanselmann discloses wherein the part specifier includes attribute

information (e.g. parameters – Fig. 1; Fig. 2, 4, 5) that is included in the specific part of the given

model.

As per claim 4, Hanselmann discloses:

correlative information acquisition means for acquiring correlative information

indicating correlation (e.g. section 3, **RCP requirements, Virtual ECU**, pg. 130-131; Fig. 5;

Real-Time Interface, dSPACE hardware – Fig. 1, pg. 130) between the part specifier specifying

the specific part of the given model acquired by the model acquisition means and the selection

information acquired by the selection information acquisition means (e.g. Fig. 3-5 – Note:

prototyping or performing real-time Hw/Sw mapping based on requirements and hardware

limitations and implementation constraints reads on correlating parts specifications and

SIMULINK data blocks setting), wherein the deletion and generation means generates the source

code (section 4, pg. 132) from the certain model that is generated using the given model acquired

by the model acquisition means based on the selection information acquired by the selection

information acquisition means and the correlative information acquired by the correlative

information acquisition means (steps 5-7, pg. 130-131; *Parameters Tuning* , section 5, pg. 132-

133).

   As per claims 5, 7, Hanselmann discloses information about a model type (*Toyota ECU*

commercial microcontroller – section 3, The **Virtual ECU**, pg. 131; *DEC Alpha AXP,*

TMS320C40 -section 6, pg. 133 – Note: Simulink-based to address verification of requirements

of parameters for Toyota's ECU reads on part including a given model) relevant to the source

code generated by the deletion and generation means (refer to claim 4); wherein the selection

information includes information about an intended use (section 7, pg. 133; section 8, pg. 134 –

Note: modeling and implementing test/prototyping using SIMULINK for a code simulating a

ECU for Toyota or Chrysler reads on requirements to fulfill via test for ECU application)

relevant to the source code generated by the deletion and generation means.

   As per claim 8, Hanselmann discloses a computer program product on a computer

readable medium for use in a code generation apparatus to generate a source code using a given

model, the computer program product comprising instructions for:

   acquiring the given model (. Step 1, Step 2, pg. 129, R col.; Fig. 4-5) whose specific part

is specified by a part specifier (e.g. *Automotive control* ... *city-driving* ... *fuel efficiency*...

Regulations ... requirements ... Total Development Environment – L column, pg. 129; Step 6,

pg. 129; Fig. 4-5);

acquiring selection information capable of indicating at least one of selection and deletion

(e.g. step 3-4; R col. pg. 129; Fig. 2, pg. 130)of the specific part using the part specifier; and

generating the source code (e.g. bottom L, pg. 132 to top pg. 132, R column) from a

certain model that is generated using the acquired given model (e.g. step 5, R col., pg. 129; Fig.

1, pg. 130) based on the acquired selection information.

As per claim 9, Hanselmann discloses simulation apparatus (e.g. Fig. 4) for executing

functions included in a certain model generated using a given model, comprising:

model acquisition means for acquiring the given model whose specific part is specified

by a part specifier;

selection information acquisition means for acquiring selection information capable of

indicating at least one of selection and deletion of the specific part using the part specifier; and

deletion and generation means for executing (see *execution* - bottom L, pg. 132 to top

pg. 132, R column; steps 5, 6 pg. 129) the functions included in the certain model that is

generated using the given model acquired by the model acquisition means based on the selection

information acquired by the selection information acquisition means;

all of which limitations having been addressed in claim 1 or 8.

As per claim 10, Hanselmann discloses a computer program product on a computer

readable medium for use in a simulation apparatus for executing functions (bottom L, pg. 132 to

top pg. 132, R column; steps 5, 6 pg. 129) included in a certain model generated using a given

model, the computer program product comprising instructions for:

acquiring the given model whose specific part is specified by a part specifier;

acquiring selection information capable of indicating at least one of selection and deletion of the specific part using the part specifier; and

executing the functions included in the certain model that is generated using the acquired given model based on the acquired selection information;

all of which limitations having been addressed in claim 1 or 9.

As per claim 11, Hanselmann discloses a model generation apparatus to generate a certain model using a given model, comprising:

model acquisition means (for acquiring the given model … a part specifier);

selection information acquisition means (for acquiring selection information … selection and deletion … using the part specifier); and

deletion and generation means for (generating the certain model …acquired by the … based on the … selection information acquisition means);

all of which having been addressed in claim 1.

As per claim 12, Hanselmann discloses a computer program product on a computer readable medium for use in a model generation apparatus to generate a certain model using a given model, the computer program product comprising instructions for:

acquiring (the given model … by a part specifier); acquiring (selection information … selection and deletion … using the part specifier); and generating the certain model …using the acquired given model … selection information); of which limitations having been addressed in claim 1.

As per claim 13, refer to the computer product of claim 8.

As per claim 14, Hanselmann discloses code generation apparatus to generate a source

code using a given model, comprising: model acquisition means for acquiring the given model,

wherein each of a plurality of specific parts included in the given model is specified by each of a

plurality of part specifiers (Fig. 2, 4, 5 – Note: GUI with file/toobar/clipboard for part/attributes

specifying via panels for a SIMULINK or dSPACE instances build reads on plurality of files,

clipboard, or panel or part specifier- opened for a given project, each being part of a plurality of

part specifiers, the validation of which being recorded as lookup tables – see pg. 134, top);

selection information acquisition means for acquiring selection information indicating at

least one of selection and deletion of a given specific part using a given part specifier that

specifies the given specific part (refer to claim 1); and

deletion and generation means for generating the source code from a certain model that is

generated using the given model acquired by the model acquisition means based on the selection

information acquired by the selection information acquisition means (refer to claim 1).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

8.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herbert

Hanselmann, 'Automotive Control: From Concept to Experiment to Product', and further in view

of Admitted Prior Art (see BACKGROUND of invention, pg. 2-3- hereinafter APA).

As per claim 6, Hanselmann does not explicitly disclose that the selection information includes information about a destination country relevant to the source code generated by the deletion and generation means. However, the automotive concept for building specific controller in compliance with the requirements or regulations of a environment or geographical settings targeted for the car is strongly suggested (see section: Introduction, pg. 129; section 7-8, pg. 133-134). Geographical requirements such as destination country where the automobile is to be delivered is further mentioned in APA (see Specifications: pg. 2; top para pg. 3) according to which Simulink (such as taught by Hanselmann) can support modeling and testing of manufactured engine destined for Japan, US or Europe. Based on the above teaching implied by the regulations considered in car making in regard to a geographical location target, it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement the requirements by Hanselmann so that selection information includes information about a destination country in association with the code generating based on Hanselmann's Total Development Environment tool because this knowledge of the target country would dictate the regulations information specific to the code needed to implement appropriate automobile functionality in that respect and successfully select and validate the parameters implicated by the requirements for such country (see APA) based upon the above automotive regulations.

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)272-3756.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan A Vu
Patent Examiner,
Art Unit 2193
January 18, 2006